

RICE-FLOUR HYDROLYSATES FAT SUBSTITUTE

THE PRESENT INVENTION CLAIMED IS

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*Sub*  
1. A food-making process, comprising the steps of:  
starting with a rice flour ingredient;  
adding an enzyme to the rice flour ingredient; and  
extruding a slurry including said rice flour  
10 ingredient and said enzyme to obtain a hydrolysis of rice  
flour; *from enzyme? what if not a hydrolase? where else, then?*  
wherein, a product is produced with a water content  
of 5%-25%, by weight.

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2. The food-making process of claim 1, further  
comprising the step of:  
substituting said product for a fat ingredient in a  
final food product.

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3. The food-making process of claim 1, further  
comprising the step of:  
using said product instead of shortening in a final  
food product.

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4. The food-making process of claim 1, wherein:  
the step of extruding promotes a short-time  
conversion of said rice flour in the presence of said enzyme.

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5. The food-making process of claim 1, wherein:  
the step of extruding includes a hydrolysis process  
that produces simple sugars, and said product has a water  
activity low enough to mimic the texture of fat that will not  
sustain significant microbiological growth.

*conf* 6. The food-making process of claim 1, further comprising the step of:

5 blending rice syrup with said rice flour in said slurry before the step of extruding and providing for an enzymatic reaction.

7. The food-making process of claim 1, further comprising the step of:

10 blending a sweetener with said rice flour in said slurry before the step of extruding and providing for an enzymatic reaction.

8. The food-making process of claim 1, wherein:

15 the step of extruding is such that said product appears like shortening, and is a combination of water, flours, simple sugars, and complex carbohydrates that have substantially less calories than fat.

9. The food-making process of claim 1, wherein:

20 the step of extruding is such that said product includes proteins that can act as emulsifiers.

10. The food-making process of claim 1, wherein:

25 the step of extruding does not include the use of an emulsifier in said slurry.

11. The food-making process of claim 1, wherein:

30 the step of extruding is such that said product has a bland, neutral taste.

12. The food-making process of claim 1, further comprising the step of:

extruding a second time to inactivate said enzymes and thereby adjust the pH of said product.

*end*  
13. The food-making process of claim 1, wherein:  
the step of extruding is extended over 3-10  
seconds.

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14. The food-making process of claim 1, wherein:  
the step of extruding is conducted between a  
temperature of 35°C to 60°C.

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15. A system for making a fat substitute for use in  
foods, comprising:

a rice flour ingredient;

an enzyme which is added to the rice flour  
ingredient; and

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means for extruding a slurry including the rice  
flour ingredient and the enzyme to obtain a hydrolysis of  
rice flour;

wherein, a fat substitute with a water content of  
5%-25%, by weight results.

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16. The system of claim 15, wherein:

the means for extruding promotes during operation a  
short-time conversion of said rice flour in the presence of  
said enzyme.

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17. The system of claim 15, further comprising:

a rice syrup that is blended in with the rice flour  
in said slurry before extruding, such that an enzymatic  
reaction results after extruding.

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18. The system of claim 15, wherein:

the means for extruding extrudes said slurry over a  
period of 3-10 seconds.

19. The system of claim 15, wherein:

the means for extruding extrudes said slurry over a temperature range 35°C to 60°C.

5 20. The system of claim 15, wherein:

said fat substitute includes protein-based emulsifiers.

21. The system of claim 15, wherein:

10 the enzyme substantially comprises an amylase enzyme.

22. The system of claim 15, wherein:

15 the enzyme substantially comprises 1% alpha-amylase enzyme.

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